

EP WELLS DAILY OPERATIONS REPORT

Report 55

08/30/2017

Company	PERMIAN
Well Type	Development
Well	UNIVERSITY 19 PW UNIT 1504H
Wellbore	UNIVERSITY 19 PW UNIT 1504H ST01
WBS No/API No	30265014 / 4230133171.01

Event Summary

Event Type	Completion only	Event Start Date	04/28/2017	Days on Location	54.00
Objective	Install Completion	Original Spud Date	02/02/2017		
Est. Days	25.00	Contractor	PERMIAN WELL SVC		
Work Unit	PERMIAN COMPLETIONS	Days To Release			
		Rig Phone/FAX No.			

Well Status

Supervisor	Tony Steel	Measured Depth(ft)	
Engineer	Bobby Ramos	TVD(ft)	
Other Supervisor	Tina Grega	24 Hr Progress(ft)	
Depth Ref/Grd Elev/Water Depth(ft)	DFE: 2,761.75 / 2,736.10	Hole size(in)	
THF Datum			
Daily NPT(hr/%)	0/0	Last Casing MD	
Days Ahd(-) Bhnd(+)(50/50)		Next Casing MD	
Actual cost to date/AFE	4,956,518/4,757,442.00	Current MW / BH EMW(ppg)	/
Actual divided by AFE	1.04	LOT/FIT EMW(ppg)	
Daily Cost	363,466	Lithology	
		Formation/MD Top	

HSE Summary

Last Incident	Date	Days	Last Incident	Date	Days	KPI's	
LWC RWC MTC FAC Last casing pressure test			PSI NII HPI GOAL ZERO DAYS PS BARRIER EVENT PS barrier bowtie review			TRCF LWCF Safety Cards - Safe Safety Card - Unsafe SSE% Last casing pressure(psi)	

Safety Comments:

*****FIRE DRILL *****

MUSTER AND INITIAL HEAD COUNT IN 3 MINUTES (100% CONFIRMATION FROM CREW LEADS)
100 PERCENT ACCOUNTABILITY BY NAME IN 11 MINUTES- (VERIFIED FROM SIGN IN SHEET TO INSURE)

PAUSE

DISCUSS DIFFERENT EVENT TYPES AND EXPECTATIONS OF CREWS, STRESS SIGN-IN/OUT FOR ACCOUNTABILITY.

Drills

Drill Category	Drill Type	Detection (sec)	Complete (sec)	Crew drilled	Pass / Fail	PIC	Comments
Pumping/Stimulat ion	Surface leak downstram of tree (clear or solids)	180.00	660.00	Day	Fail	J STEELE	FIRE DRILL- 1 PERSON

HSE Drills

Drills/Tests	Date	Days Since Last		
Last Derrick Inspection Last BOP function test Last BOP Test Next BOP Test			JSA's/Toolbox Talks Days Since Last Drill	53

Operations Summary

24 Hour Summary

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WellboreUNIVERSITY 19 PW UNIT 1504H
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Perf & Frac Stgs 39,40, 41, 42,43. Perf stage 44

Update Since Report Time

24 Hour Forecast

Continue frac operations

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Wellbore UNIVERSITY 19 PW UNIT 1504H ST01

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
0:00	0.25	FRAC	WLT			0		Pick up guns & plug. Remove night cap. Stab lubricator. Fill lubricator. PT lubricator to 1k-8kpsi. Open well with 3300 psi. RIH to 200' conduct checks.
0:15	0.90	FRAC	WLT			0		Stage #39 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Downhole Technology Boss Hog composite frac plug. Tie into liner top @10881. Bring on pumps at 11500'. Pump down as follows: 3 bpm @ 4200psi @11600 6 bpm @ 4800psi @11700 11.5 bpm @ 5600 psi @11800 11.5 bpm w/ 5600 psi Set plug @ 13,776' ft Perforate as follows: 13,712' - 13,713' 13,667' - 13,668' 13,623' - 13,624' 13,578' - 13,579' Stabilized pressure after perf: 4150 psi Pump down volume: 49 bbls
1:09	0.72	FRAC	WLT			0		POOH and wait on frac at 200'. Shut in well with 4924 psi. Bleed off. Break lubricator. All shots fired. Drop ball. MU night cap. LD tools. Secure crown and wing valves. Handover from WL to frac
1:52	0.53	FRAC	WLF			0		Wait on other pad operations.
2:24	1.55	FRAC	FRT			0		Open well w/ 4541 psi for stage 39 frac. Stage 39 Summary University 19 PW Unit 1504H Interval 13578 - 13713 Open Well Pressure 3,851 psi Max Treating Pressure 9,176 psi Max Slurry Rate 61.4 bpm Average Treating Pressure 8,545 psi Average Slurry Rate 58.0 bpm Breakdown Pressure 6,180 psi Breakdown Rate 10.7 bpm Breakdown Volume 14,154 gal Avg HHP 12,147 hp Final ISIP 5,380 psi Frac Gradient 0.898 psi/ft Pad Volume 13,902 gal Main Body Volume 168,126 gal Flush Volume 25,032 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 420,220 lbs Proppant in Formation 420,220 lbs Avg Proppant Concentration 3.43 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,052 bbls Load to Recover w/o Acid 4,040 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 3,911 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 49 bbls pump down rate 11.5 bpm Max pump down pressure 5,600 psi Fluid Temp 72.0 ?F Total Pump Time 1:31 hr:min Pumps Lost During Job 0 Treatment Start Time 2:24 Treatment End Time 3:55 1:31 Diverter Slurry bbls

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Proppant pumped as a ramp from 0.5-3.0PPA, then 0.5PPA steps from 3.0- 4.0PPA. All proppant placed. Stage pumped by design. -500 gallons of 15% HCl displaced. -Two 40 bbl, 20# gel sweeps ran prior to flush.
3:57	0.42	FRAC	FWL			0		Handover from frac to WL. Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. PT lubricator to 8000 psi Open well with 4566 psi.
4:22	2.02	FRAC	WLT			0		"Stage #40 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Downhole Technology Boss Hog composite frac plug. Tie into liner top @ 10488. Bring on pumps at 11500'. Pump down as follows: 3 bpm @ 4300 psi 6 bpm @ 4500 psi11600 11.5 bpm @ 5100 psi11700 Max:11.5 bpm. Max: 5700 psi13580 Set plug @ 13554 ft Perforate as follows: 13534' - 13535' 13489' - 13490' 13445' - 13446' ' - 1' Stabilized pressure after perforating: 4341 psi Pump down volume: 45 bbl" POOH
6:23	0.43	FRAC	WLF			0		Shut in well with 4200 psi. Bleed off. Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves. Handover from WL to frac.
6:49	1.85	FRAC	FRT			0		Stage 40 Summary University 19 PW Unit 1504H Interval 13400 - 13535 Open Well Pressure 4,087 psi Max Treating Pressure 9,244 psi Max Slurry Rate 60.4 bpm Average Treating Pressure 8,652 psi Average Slurry Rate 54.9 bpm Breakdown Pressure 6,920 psi Breakdown Rate 9.2 bpm Breakdown Volume 14,070 gal Avg HHP 11,642 hp Final ISIP 5,370 psi Frac Gradient 0.898 psi/ft Pad Volume 14,448 gal Main Body Volume 187,446 gal Flush Volume 24,990 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 420,020 lbs Proppant in Formation 420,020 lbs Avg Proppant Concentration 2.98 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,508 bbls Load to Recover w/o Acid 4,496 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 4,371 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 45 bbls pump down rate 11.5 bpm Max pump down pressure 5,700 psi Fluid Temp 72.0 ?F Total Pump Time 1:47 hr:min Pumps Lost During Job 1 Treatment Start Time 6:51 0:00 0:00 Treatment End Time 8:38 0:00 1:47

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Diverter Slurry bbls Proppant pumped as a ramp from 0.5-3.0PPA, then 0.5PPA steps from 3.0- 4.0PPA. All proppant placed. Stage pumped by design. -500 gallons of 15% HCl displaced. -Two 40 bbl, 20# gel sweeps ran prior to flush. - Lost pump 10093 due to packing leak.
8:40	0.38	FRAC	WLF			0		*****FIRE DRILL***** MUSTER AND INITIAL HEAD COUNT IN 3 MINUTES 100 PERCENT ACCOUNTABILITY BY NAME IN 11 MINUTES PAUSE DISCUSS DIFFERENT EVENT TYPES AND EXPECTATIONS OF CREWS, STRESS SING-IN/OUT FOR ACCOUNTABILITY.
9:03	0.95	FRAC	WLF			0		Handover from frac to wireline. Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 8000 psi Open well with 4566 psi. RIH.
10:00	1.00	FRAC	WLF			0		"Stage #41 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Downhole Technology Boss Hog composite frac plug. Tie into liner top @ 10488. Bring on pumps at 11500'. Pump down as follows: 3 bpm @ psi 6 bpm @ psi11550 10 bpm @ psi11600 Max:10 bpm. Max: 6028 psi13405 Set plug @ 13380 ft Perforate as follows: 13356' - 13357' 13311' - 13312' 13267' - 13268' Stabilized pressure after perforating: 4470 psi Pump down volume: bbl" POOH
11:00	0.57	FRAC	WLF			0		Shut in well with 4400 psi. Bleed off. Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves. Handover from WL to frac.
11:34	2.07	FRAC	FRT			0		Stage 41 Summary University 19 PW Unit 1504H Interval 13222 - 13357 Open Well Pressure 4,262 psi Max Treating Pressure 9,380 psi Max Slurry Rate 60.0 bpm Average Treating Pressure 8,887 psi Average Slurry Rate 50.5 bpm Breakdown Pressure 7,259 psi Breakdown Rate 9.4 bpm Breakdown Volume 13,650 gal Avg HHP 11,000 hp Final ISIP 5,144 psi Frac Gradient 0.878 psi/ft Pad Volume 13,860 gal Main Body Volume 174,048 gal Flush Volume 24,780 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 420,700 lbs Proppant in Formation 420,700 lbs Avg Proppant Concentration 3.29 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,186 bbls Load to Recover w/o Acid 4,174 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 4,052 bbls 20# Linear Fluid Pumped 80 bbls

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								20# Crosslink Fluid Pumped 0 bbls Pump down volume 42 bbls pump down rate 10.0 bpm Max pump down pressure 6,028 psi Fluid Temp 72.0 ?F Total Pump Time 1:49 hr:min Pumps Lost During Job 0 Treatment Start Time 11:34 0:00 0:00 Treatment End Time 13:23 0:00 1:49 Diverter Slurry bbls Proppant pumped as a ramp from 0.5-3.0PPA, then 0.5PPA steps from 3.0- 4.0PPA. All proppant placed. Stage pumped by design. -500 gallons of 15% HCl displaced. -Two 40 bbl, 20# gel sweeps ran prior to flush. -Stack Frac'n now.
13:38	0.78	FRAC	FWL			0		***** NPT TIME KEANE WIRELINE STARTS 13:25 HRS***** handover from frac to wireline. Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 4000 psi NOTE: GREASE PUMP BLEW OUT A SEAL, NOT ABLE TO FINISH TEST, SHUT DOWN AND BLEED OFF PRESSURE AND TROUBLE SHOOT. REPAIR O-RING SEALS AND *****NPT TIME STOPS 14:25*****
14:25	0.58	FRAC	FWL			0		FINISH PRESSURE TEST TO 8K OPEN WELL WITH 4625 PSI RIH TO LINER TOP
15:00	1.08	FRAC	WLT			0		"Stage #42 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Downhole Technology Boss Hog composite frac plug. Tie into liner top @ 10881. Bring on pumps at 11500'. Pump down as follows: 3 bpm @ 4300 psi 6 bpm @ 4800 psi11550 10 bpm @ 5300 psi11600 Max:10 bpm. Max: 6949 psi13245 Set plug @ 13202 ft Perforate as follows: 13178' - 13179' 13133' - 13134' 13092' - 13093' ' - 1' Stabilized pressure after perforating: 4400 psi Pump down volume: 35 bbl" POOH
16:05	0.38	FRAC	WLF			0		Shut in well with 4068 psi. Bleed off. Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves. Handover from WL to frac.
16:28	1.72	FRAC	FRT			0		Stage 42 Summary University 19 PW Unit 1504H Interval 13044 - 13179 Open Well Pressure 4,068 psi Max Treating Pressure 9,317 psi Max Slurry Rate 60.6 bpm Average Treating Pressure 8,659 psi Average Slurry Rate 55.6 bpm Breakdown Pressure 6,856 psi Breakdown Rate 9.4 bpm Breakdown Volume 12,810 gal Avg HHP 11,800 hp Final ISIP 5,741 psi Frac Gradient 0.930 psi/ft Pad Volume 12,684 gal Main Body Volume 171,444 gal Flush Volume 24,612 gal 30/50 AZ Sand Pumped 0 lbs

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Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								100 Mesh Sand Pumped 419,760 lbs Proppant in Formation 419,760 lbs Avg Proppant Concentration 3.30 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,117 bbls Load to Recover w/o Acid 4,105 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 3,990 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 35 bbls pump down rate 10.0 bpm Max pump down pressure 6,949 psi Fluid Temp 72.0 ?F Total Pump Time 1:43 hr:min Pumps Lost During Job 0 Treatment Start Time 16:28 0:00 0:00 Treatment End Time 18:11 0:00 1:43 Diverter Slurry bbls Proppant pumped as a ramp from 0.5-3.0PPA, then 0.5PPA steps from 3.0- 4.0PPA. All proppant placed. Stage pumped by design. -500 gallons of 15% HCl displaced. -Two 40 bbl, 20# gel sweeps ran prior to flush. -Stack Frac'n now.
18:11	0.33	FRAC	FWL			0		Handover from frac to wireline. Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 8000 psi Open well with 4750 psi. RIH.
18:31	0.90	FRAC	WLT			0		Stage #43 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Downhole Technology Boss Hog composite frac plug. Tie into liner top @10881. Bring on pumps at 11500'. Pump down as follows: 3 bpm @ 4500psi @11600 6 bpm @ 4700psi @11700 11 bpm @ 5600 psi @11800 11 bpm w/ 5600 psi Set plug @ 13,006' ft Perforate as follows: 13,000' - 13,001' 12,955' - 12,956' 12,915' - 12,916' 12,867' - 12,868' Stabilized pressure after perf: 4200 psi Pump down volume: 33 bbls
19:25	0.75	FRAC	WLT			0		POOH
20:10	0.42	FRAC	WLF			0		Shut in well with 4400 psi. Bleed off. Break lubricator. All shots fired. Drop ball. MU night cap. LD tools and lub. Secure crown and wing valves. Handover from WL to frac.
20:35	1.72	FRAC	FRT			0		Stage 43 Summary University 19 PW Unit 1504H Interval 12866 - 13001 Open Well Pressure 4,056 psi Max Treating Pressure 9,387 psi Max Slurry Rate 60.9 bpm Average Treating Pressure 8,821 psi Average Slurry Rate 54.4 bpm Breakdown Pressure 6,860 psi Breakdown Rate 10.3 bpm Breakdown Volume 13,188 gal Avg HHP 11,761 hp Final ISIP 5,096 psi Frac Gradient 0.874 psi/ft

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Wellbore UNIVERSITY 19 PW UNIT 1504H ST01

Time Summary

Start	Hours	PH	OPN	Detail	Drilled Depth (ft)	NPT level	Rig Rate	Description
								Pad Volume 13,356 gal Main Body Volume 175,308 gal Flush Volume 24,696 gal 30/50 AZ Sand Pumped 0 lbs 100 Mesh Sand Pumped 420,860 lbs Proppant in Formation 420,860 lbs Avg Proppant Concentration 3.22 lb/gal Max Proppant Concentration 4.00 lb/gal Load to Recover 4,207 bbls Load to Recover w/o Acid 4,195 bbls 15% HCL Spearhead 504 gal Slickwater Fluid Pumped 4,082 bbls 20# Linear Fluid Pumped 80 bbls 20# Crosslink Fluid Pumped 0 bbls Pump down volume 33 bbls pump down rate 11.5 bpm Max pump down pressure 5,600 psi Fluid Temp 72.0 ?F Total Pump Time 1:42 hr:min Pumps Lost During Job 0 Treatment Start Time 20:36 0:00 0:00 Treatment End Time 22:18 0:00 1:42 Diverter Slurry bbls Proppant pumped as a ramp from 0.5-3.0PPA, then 0.5PPA steps from 3.0- 4.0PPA. All proppant placed. Stage pumped by design. -500 gallons of 15% HCl displaced. -Two 40 bbl, 20# gel sweeps ran prior to flush.
22:18	0.17	FRAC	FWL			0		Handover from frac to wireline. Pick up lubricator. Remove night cap. PU tools. Stab lubricator. Fill lubricator. Pressure test lubricator to 8000 psi Open well with 4250 psi. RIH.
22:28	1.00	FRAC	WLT			0		Stage #44 Plug and Perf RIH with (4) 1' Keane guns: 2.75" OD HSC at 6SPF with 60* phased perforating guns and Downhole Technology Boss Hog composite frac plug. Tie into liner top @10881. Bring on pumps at 11500'. Pump down as follows: 3 bpm @ 4300psi @11600 6 bpm @ 4500psi @11700 11.5 bpm @ 5700 psi @11800 11.5 bpm w/ 5700 psi Set plug @ 12,844' ft Perforate as follows: 12,844' - 12,845' 12,777' - 12,778' 12,733' - 12,734' 12,688' - 12,689' Stabilized pressure after perf: 4201 psi Pump down volume: 28 bbls
23:28	0.53	FRAC	WLT			0		POOH
Total	24.00							

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Well UNIVERSITY 19 PW UNIT 1504H
Wellbore UNIVERSITY 19 PW UNIT 1504H ST01

NPT Summary

Start Date/Time	Responsible Company	NPT Code	Failure MD (ft)	Ops Code	Type*	Equipment Type	Net time (hr)	Gross time (hr)	Severity	Status
08/30/2017 13:38	KEANE FRAC LP	Perforation		FWL	EN	Elect W/L Surface Equipment	0.78	0.78		OPEN
Description: GREASE PUMP BLEW OUT A SEAL, NOT ABLE TO FINISH TEST, SHUT DOWN AND BLEED OFF PRESSURE AND TROUBLE SHOOT. REPAIR O-RING SEALS						Title: WL LEAK				
Total							0.78	0.78		